Wisconsin

Regional Transportation Authority

Work Trip Survey
Summary Report

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April 1982

CHAPTER ONE

INTRODUCTION

This report summarizes the findings of a Work Trip Survey conducted by the Regional Transportation Authority in the Spring and Summer of 1981. It is an important element of the Regional Transit Needs Assessment (RTNA) being conducted by RTA with the assistance of the Northeastern Illinois Planning Commission (NIPC). Because the greatest growth in trip making and transit demand over the next decade is expected to occur in suburban areas, the RTNA emphasizes suburban-to-suburban and city-to-suburban travel patterns; however, city-city and suburban trips to the Chicago Central Business District (CBD) are well addressed as well.

BACKGROUND

The Regional Transportation Authority (RTA), in its effort to provide effective and efficient public transportation, has been vitally concerned with the issue of resource allocation. Given the fiscally constrained environment in which services must be programmed and a steadily increasing demand for mass transit, it is essential that sufficient information be available for the RTA to facilitate the programming of cost effective services.

Particular emphasis in this regard must be directed to suburban services. Land use densities and patterns in the suburbs frequently are not conducive to supporting "traditional" levels, or modes, of transit. Yet, the greatest growth in travel demand over the next ten years will probably occur in suburban areas. Clearly, in an environment of constrained fiscal resources, the utmost care and consideration must be given to developing techniques by which transit improvements can be provided to the areas in the region which will benefit most from service provision.

In light of the aforementioned, the Regional Transportation Authority with the assistance of the Northeastern Illinois Regional Planning Commission initiated a major regional planning project in October, 1980 entitled: REGIONAL TRANSIT NEEDS ASSESSMENT (RTNA). The major emphasis of the project is on the identification of transit service improvements that will benefit area residents that both live and work in suburban areas.

The goal of this project is to develop policies which relate to appropriate areas for transit, modes of operation, and levels of service consistent with regional plans and policies, as well as development forecasts. In order to accomplish this goal the following tasks were undertaken as Phase I of the RTNA:

1) Update existing employment data to identify current employment sites and densities;

2) Identify present work trip travel patterns;

3) Analyze transit mode characteristics for applicability to particular development and travel patterns;

4) Define threshold population/employment characteristics necessary to justify cost effective levels of service for various transit modes; and

5) Identify regional impacts resulting from policies necessary to implement cost effective services.

The remainder of this report summarizes the results of an employer survey conducted to address that activity prescribed in Task #2, above.

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CHAPTER TWO

SURVEY PARAMETERS

Two thousand six hundred sixty-six (2,666) questionnaires were distributed to employers in all areas of the region. One thousand three hundred thirty-three (1,333) codifiable responses were received for a response rate of fifty (50) percent. The respondent firms represented 288,198 employees, or 8.5% of the region's estimated employment of 3,384,693. Selection of the firms to be surveyed was based on a sample of both large and small firms throughout the six counties and adjacent areas in Indiana. The Northwest Indiana Regional Planning Commission (NIRPC) participated in this process in Indiana. The sample was selected from a complete list of employees supplied by NIPC, NIRPC and other sources.

Each participating firm provided information on number of employees, shift hours, employment by shift and home origins of their employees. These data were supplemented by information previously collected by RTA.

The data concerning home origins were provided on a zip code basis, allowing the development of a zip code area to zip code trip interchange matrix. Since the six county region contains 279 zip codes, it was determined that this level of detail would provide an adequate data base. For ease of preliminary analysis, the 279 zip codes were aggregated into 87 zones, with 20 additional zones located in surrounding Illinois counties, Indiana and Wisconsin. Exhibit 1 illustrates the 87 zones within the six county area. Exhibit 2 shows the basic type of survey instrument used (in actuality variations were used which listed zip codes on a sub-regional basis in order to facilitate home origin enumeration by the employer respondent).

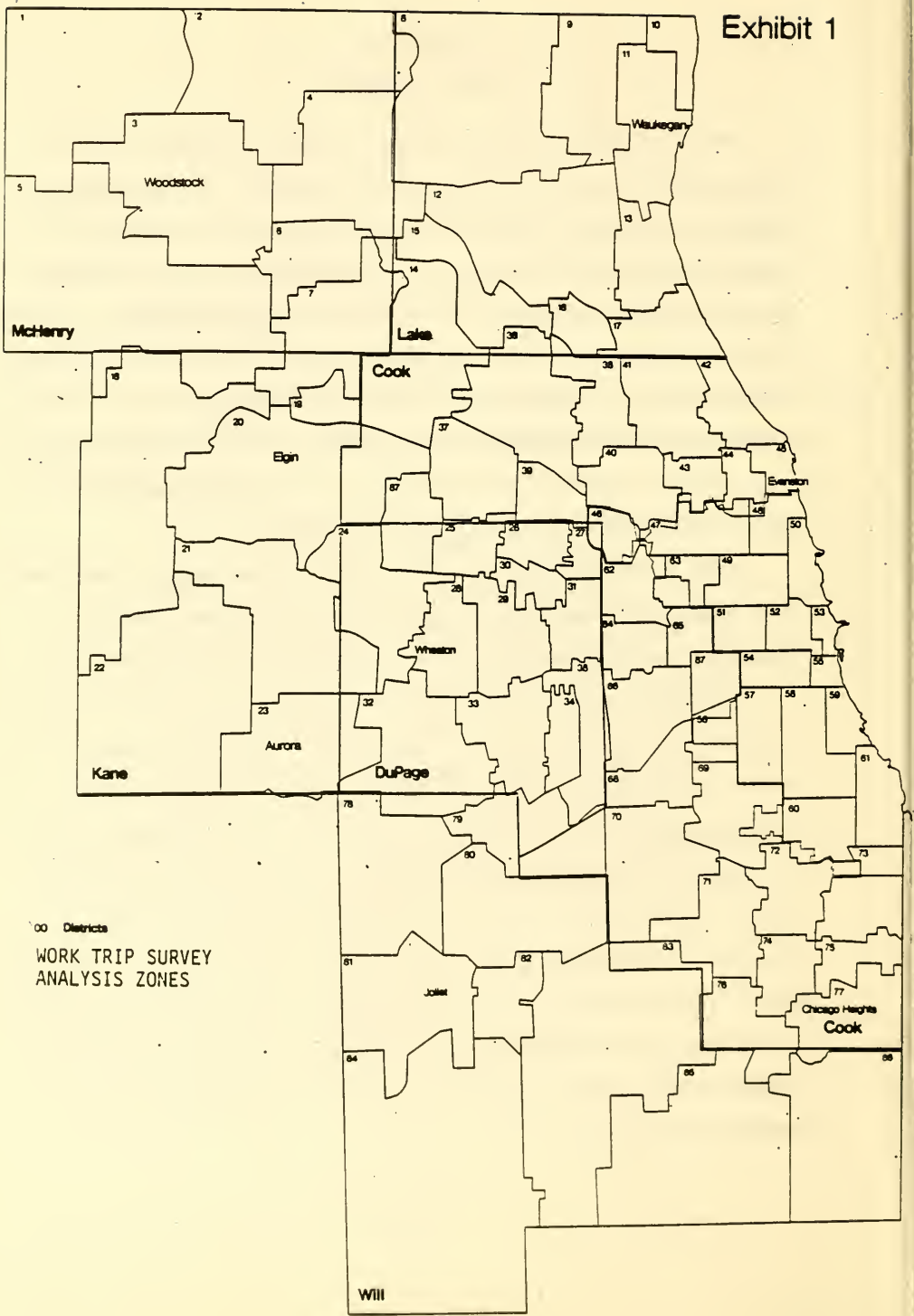


Exhibit 1
Woodstock
McHenry
Lake
Waukegan
Cook
Elgin
Evanston
Wheaton
Aurora
Kane
DuPage
Joliet
Chicago Heights
Cook
Will
00 Districts
WORK TRIP SURVEY
ANALYSIS ZONES

Regional Transportation Authority

001841

RTA EMPLOYERS SURVEY

All information will be kept completely confidential. Please fold and staple completed form and mail postage free.

1. Where is your firm located?

ADDRESS: _____
(Street) (town) (zip code)

2. Please indicate the number of full and part-time employees at this location only and how many work each shift.

	Shift Start Time	Shift Quit Time	NUMBER OF EMPLOYEES Full-Time	Part-Time
WEEKDAY				
SATURDAY				
SUNDAY				

3. Do these shifts rotate?
YES _____
NO _____

4. Is your firm currently served by:

	YES	NO	DON'T KNOW
a. Special transportation provided by your company (such as van pool, bus)?			
b. Private or charter bus service not provided or sponsored by your company?			

5. Where do your employees live? Please indicate the numbers in the blanks on the reverse side. If your firm has more than one location, please list the employees at this address only. If this information is computerized or otherwise listed, you may prefer to attach a print-out or list.

FOLD HERE PLEASE

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 73251 - CHICAGO, ILLINOIS
POSTAGE WILL BE PAID BY ADDRESSEE

REGIONAL TRANSPORTATION AUTHORITY
300 N. STATE STREET
CHICAGO, ILLINOIS 60610

If there are five or more employees living in a city not listed below, please specify the name of the city, zip code and number of employees under "Other."

No. of Employees	Municipality	Zip Code
	Addison	60101
	Aurora	60504
	Aurora	60506
	Aurora	60506
	Aurora	60507
	Aurora	60538
	Bartlett	60103
	Batavia	60510
	Berkeley	60163
	Bellwood	60104
	Bensenville	60106
	Bloomingdale	60108
	Bolingbrook	60439
	Broadview	60153
	Burr Ridge	60521
	Carol Stream	60187
	Chicago (please detail zip codes below)	
	Clarendon Hills	60514
	Countryside	60525
	Darien	60559
	Des Plaines	60016
	Des Plaines	60017
	Des Plaines	60018
	Downers Grove	60515
	Elgin	60120
	Elk Grove Village	60007
	Elmhurst	60126
	Franklin Park	60131
	Geneva	60134
	Glendale Heights	60137
	Hanover Park	60103
	Hinsdale	60521
	Hoffman Estates	60172
	Indianhead Park	60525
	Itasca	60143

No. of Employees	Municipality	Zip Code
	La Grange	60525
	La Grange Highlands	60525
	La Grange Park	60525
	Lemont	60439
	Lisle	60532
	Lombard	60148
	Naperville	60540
	North Aurora	60542
	Northlake	60164
	Oak Brook	60521
	Oak Brook Terrace	60181
	Romeoville	60441
	Roselle	60172
	St. Charles	60174
	Schaumburg	60172
	South Elgin	60177
	Stone Park	60165
	Streamwood	60103
	Valley View	60174
	Villa Park	60181
	Warrenville	60555
	Wayne	60184
	Westchester	60153
	West Chicago	60185
	Western Springs	60558
	Westmont	60559
	Wheaton	60187
	Willowbrook	60521
	Willow Springs	60480
	Winfield	60190
	Wood Dale	60181
	Woodridge	60516

OTHER

No. of Employees	Municipality	Zip Code	No. of Employees	Municipality	Zip Code

6. If you have any comments or suggestions regarding provision of transit service to your location, please include them below.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

EXHIBIT 2
SAMPLE SURVEY FORM

CHAPTER THREE

SURVEY RESULTS

Discussion of survey results is grouped for convenience as follows:

1) trips within zones;
2) trips between zones;
3) suburban to Chicago CBD trips;
4) Chicago to suburban trips;
5) major suburban corridors;
6) subregional trip interchange; and
7) satellite city trips.

TRIPS WITHIN ZONES

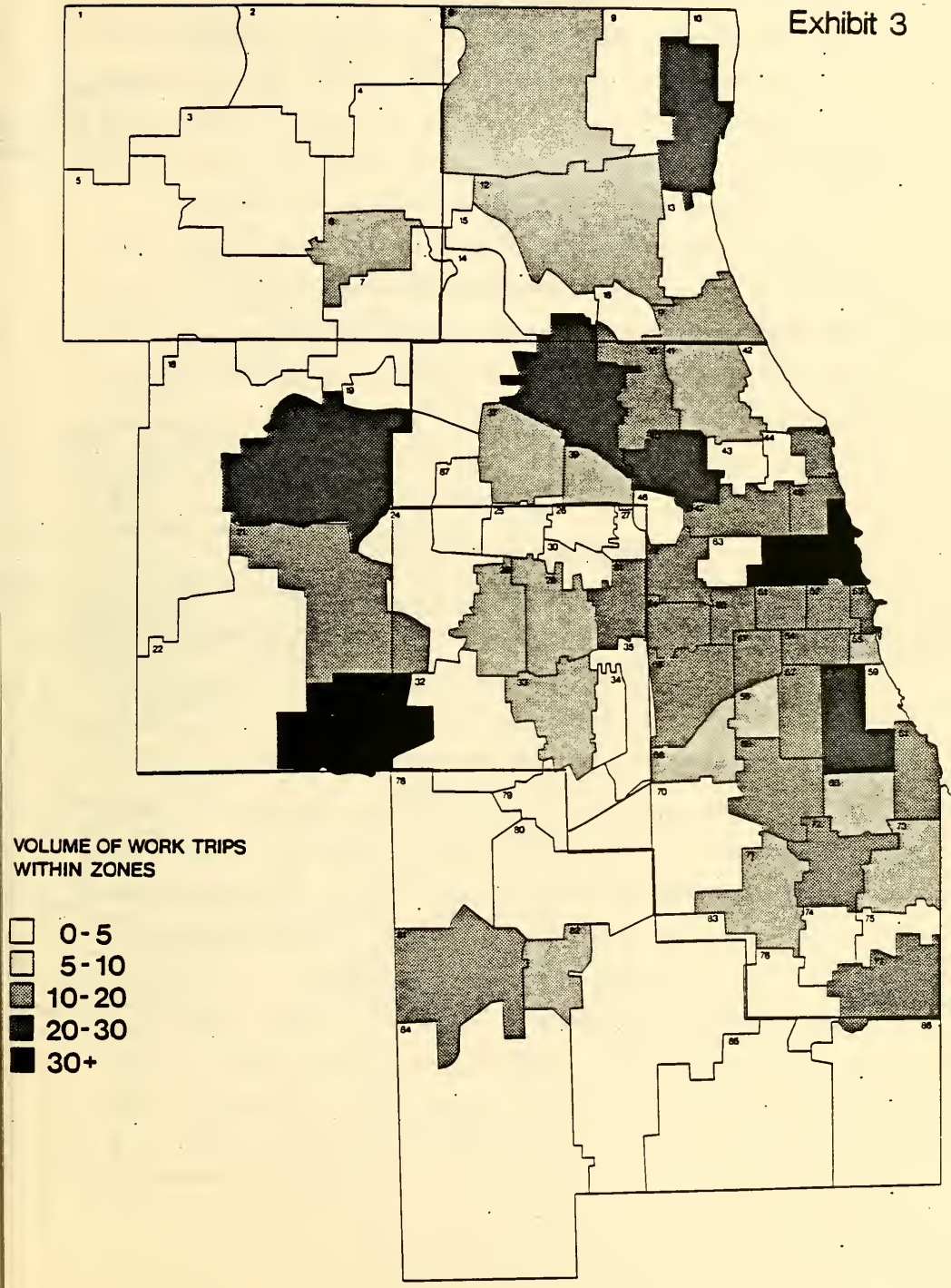
The survey results indicate that almost 25% (841,865) of work trips are trips with origins and destinations within a given zone. Exhibit 3 depicts zones having volumes within zones of greater than 5000. Exhibit 4 shows the number of trips within zones for all zones.

The zones having the largest number of trips within zones include the Chicago CBD (Zone 53), the near north side of Chicago (Zones 50 and 49), south central Chicago (Zone 58), Des Plaines and Park Ridge (Zone 40), Arlington Heights and Palatine (Zone 36), and the satellite cities of Waukegan, Elgin and Aurora (Zones 11, 20 and 23). Joliet (Zones 81 and 82) also has a high volume of internal trips if the two zones encompassing that city are combined.

TRIPS BETWEEN ZONES

A presentation of all trips between zones (in effect on 87 x 87 matrix) is beyond the scope of this summary, and, in fact, trips between many pairs of zones are non-existent or do not occur in significant numbers.

Exhibit 3



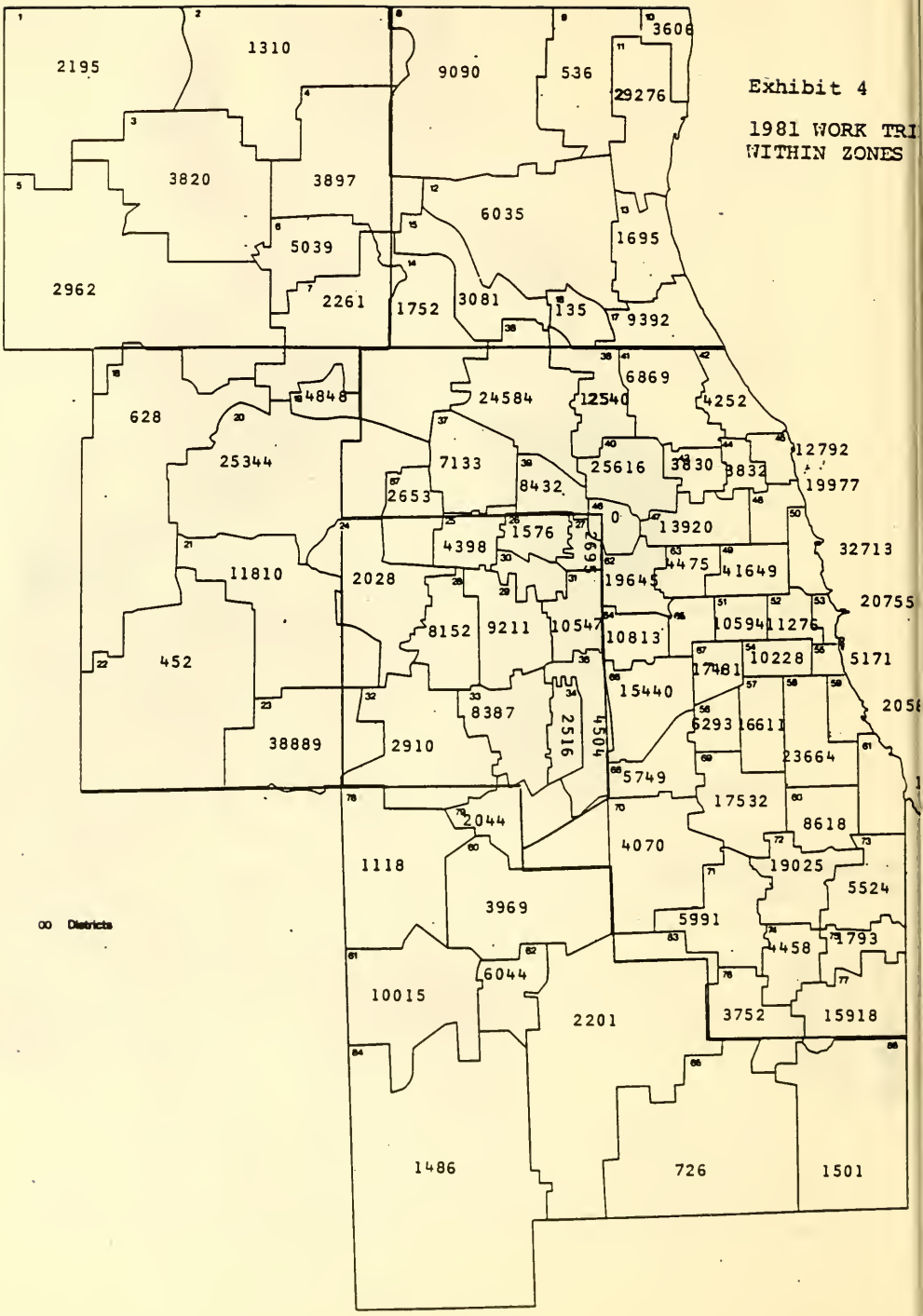


Exhibit 4
1981 WORK TRI
WITHIN ZONES
00 Districts
2195
1310
9090
536
3606
29276
3820
3897
6035
1695
5039
2962
2261
1752
3081
135
9392
628
4848
24584
12540
6869
4252
25344
7133
25616
3830
3832
12792
19977
2653
8432
0
13920
32713
4398
1576
2695
4475
41649
11810
2028
19645
20755
8152
9211
10547
10813
10594
11276
452
17481
10228
5171
15440
8387
2516
4504
6293
16611
38889
2910
23664
5749
17532
2044
8618
1118
4070
19025
5524
3969
5991
4458
1793
6044
10015
2201
3752
15918
1486
726
1501

Consequently, this presentation stresses significant volumes of trips between zones and trips between zones of particular interest such as: (1) suburban to Chicago CBD; (2) Chicago (all) to suburban; (3) high volume suburban corridors; and (4) satellite city employment attraction.

Exhibit 5 illustrates high volume (over 5000 one-way trips) work trips between zones, excluding trips to the CBD of Chicago (Zone 53). The arrow direction implies the work destination. The City of Chicago, with its higher population density, predictably has a large number of work trips between zones. Other high volume trips are scattered throughout the region with two exceptions: (1) a concentration of high volume trips between zones in northwest Cook County, and (2) several high volume interchanges in DuPage County.

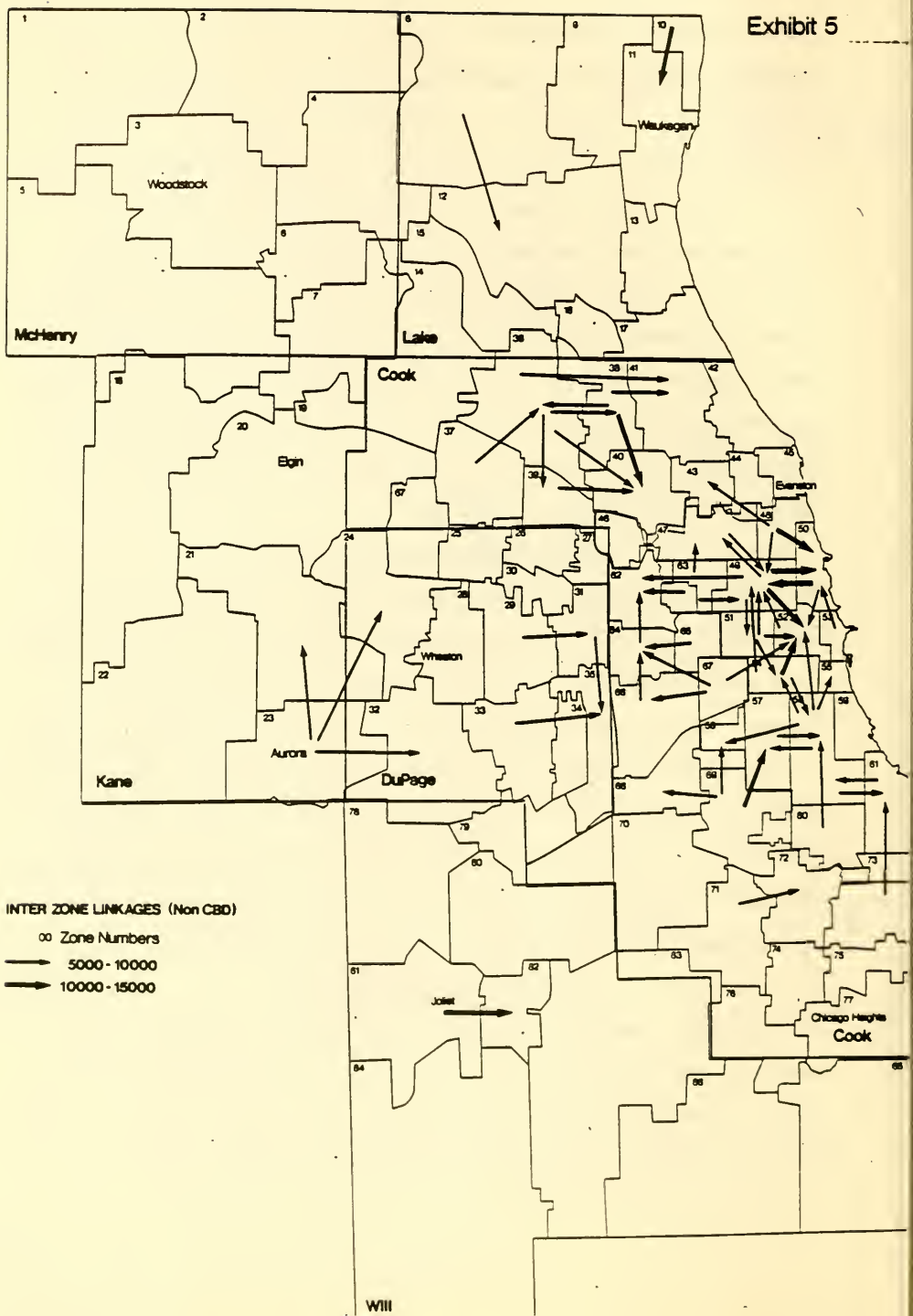
SUBURBAN TO CHICAGO CBD TRIPS

Exhibit 6 depicts the high volume (5,000 - 15,000) and intermediate volume (1,000 - 5,000) suburban to Chicago CBD work trips. Note that the high volume work trips do, in fact, follow the principal commuter railroad and freeway corridors. Additionally, high volume zones of origin are all located within Cook and DuPage Counties. Intermediate volumes are generated from Cook, DuPage and a small number of zones in McHenry, Kane, Lake and Will Counties. By and large, it appears that Cook and DuPage Counties have the greatest trip linkage to the CBD with this linkage diminishing rapidly in the remaining counties.

CHICAGO TO SUBURBAN WORK TRIPS

Exhibit 7 depicts high volume (more than 1000 trips) trips from each City zone to suburban work destination. A high volume of trips are made to northwest Cook County, particularly Elk Grove Village, Des Plaines, Morton Grove/Niles, west suburban Cook County, Oak Brook/Hinsdale, and to

Exhibit 5


Woodstock
McHenry
Lake
Waukegan
Cook
Elgin
Evanston
Wheaton
Aurora
Kane
DuPage
Joliet
Chicago Heights
Cook
INTER ZONE LINKAGES (Non CBD)
∞ Zone Numbers
5000 - 10000
10000 - 15000

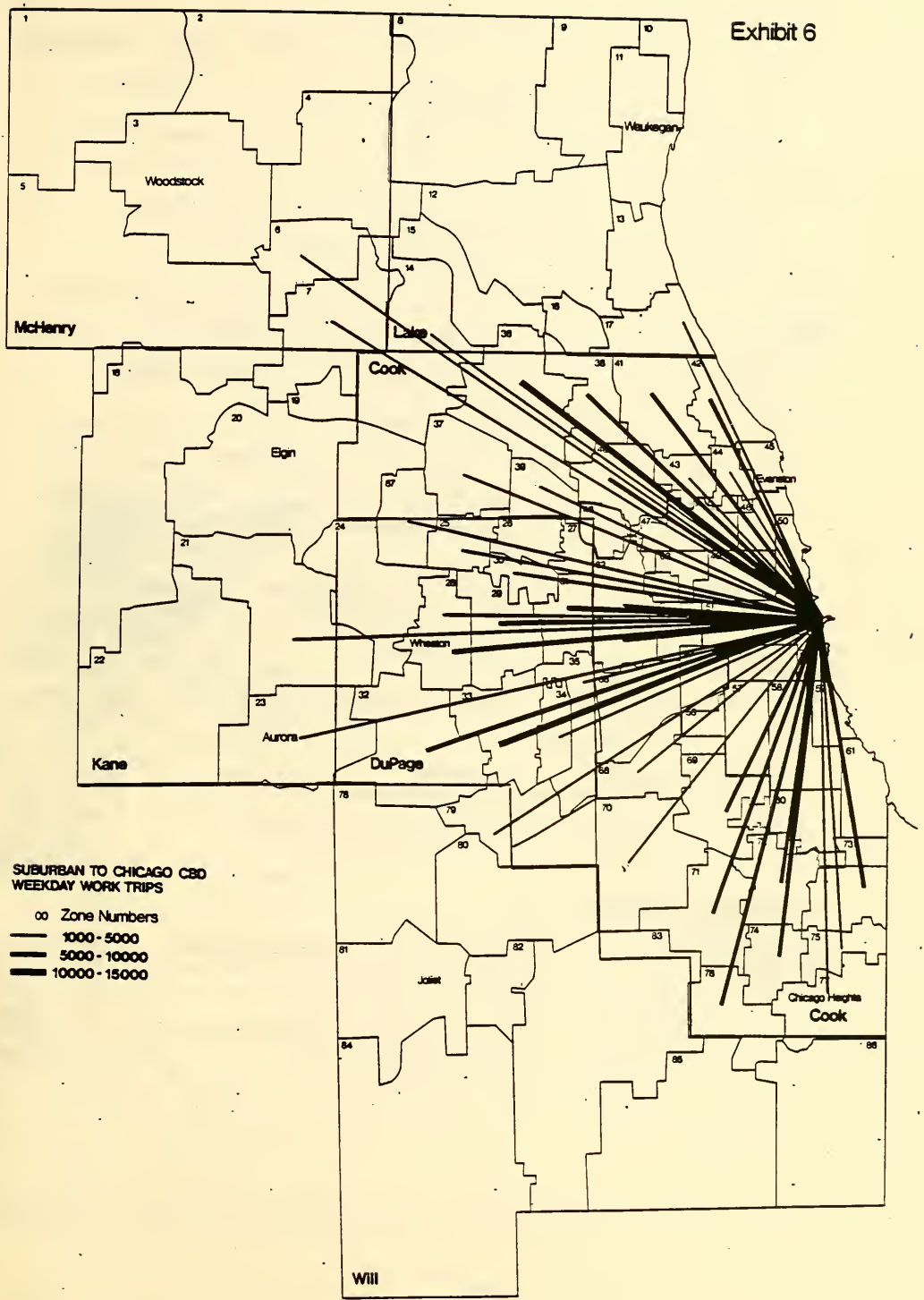
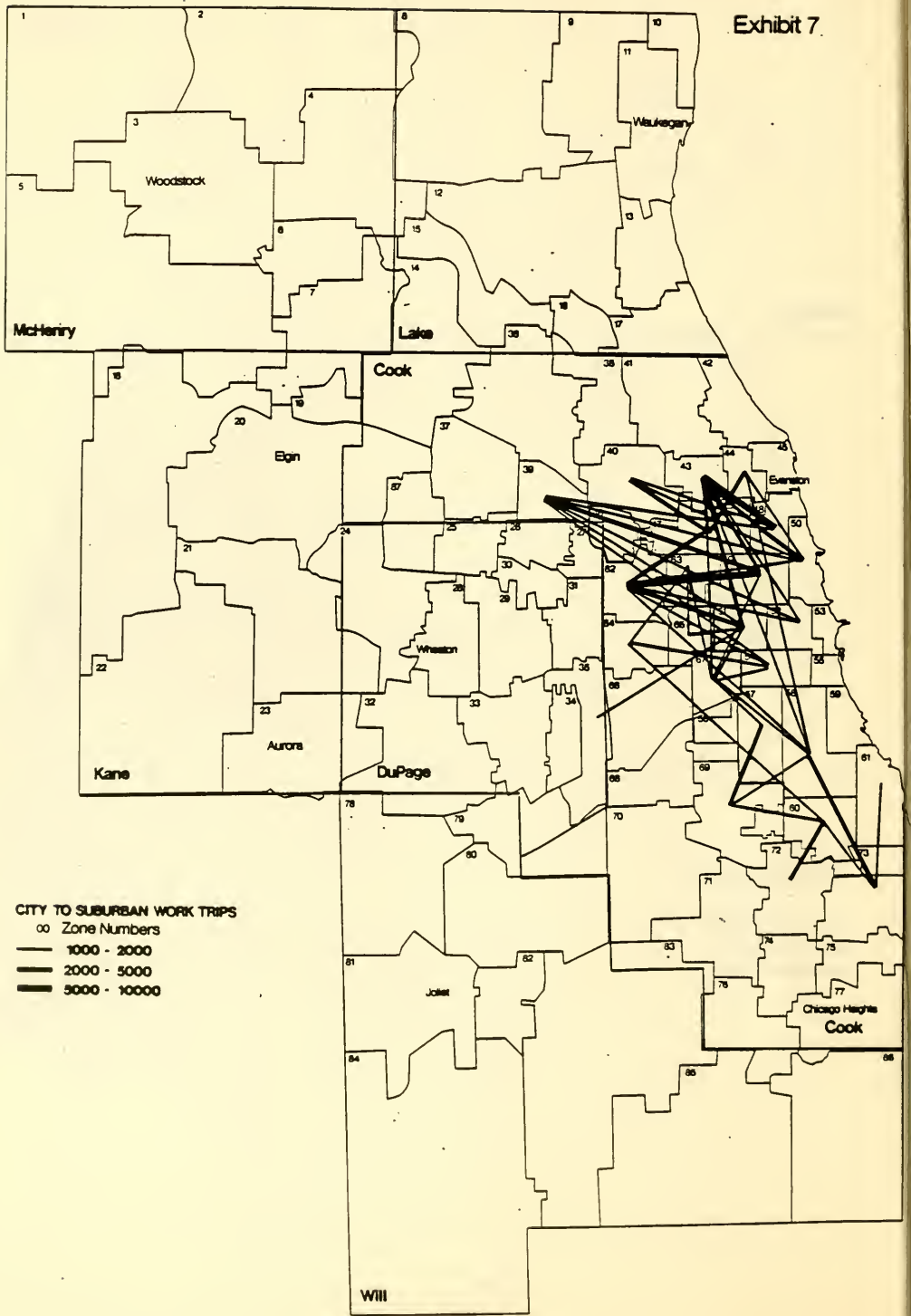


Exhibit 6
Woodstock
McHenry
Waukegan
Lake
Cook
Elgin
Evanston
Wheaton
Aurora
Kane
DuPage
Joliet
Chicago Heights
Cook
Will
SUBURBAN TO CHICAGO CBD
WEEKDAY WORK TRIPS
∞ Zone Numbers
1000 - 5000
5000 - 10000
10000 - 15000

Exhibit 7


Woodstock
Waukegan
McHenry
Lake
Cook
Elgin
Evanston
Wheaton
Aurora
Kane
DuPage
Joliet
Chicago Heights
Cook
Will
CITY TO SUBURBAN WORK TRIPS
∞ Zone Numbers
1000 - 2000
2000 - 5000
5000 - 10000

a lesser extent, close-in portions of South Suburban Cook County. Of significance is the length of some of these trips, particularly those originating on the south side of Chicago destined for northwest Cook County.

Additionally, reverse commuting from the City to the suburbs, while it has received heightened interest in recent years, is not as widespread as commonly believed. Northwest and west suburban Cook County are the principal work destinations of the reverse commuter.

Part of the reason for this may be a result of where the employment opportunities lie. The following table shows total employment by zone for the ten zones outside the CBD having the largest employment base. Taken together, these ten zones account for 25.1% of total regional employment, in comparison to the CBD component of 17.0%. Of the ten, the suburban zones are generally those which draw reverse commute trips and they account for 11.1% of total regional employment.

District	Area	Total * Employment	% of Regional Total
49	Northwest Chicago	123,684	3.6
52	West of CBD	118,605	3.5
62	Franklin Pk/Schiller Pk/Northlake	95,234	2.8
50	Near North	92,442	2.7
40	DesPlaines/Park Ridge	91,649	2.7
58	Southwest Chicago	74,365	2.2
57	Far southwest Chicago	67,189	2.0
47	Rosemont/Northwest Chicago	65,748	1.9
36	Palatine/Rolling Meadows/Arlington Heights	64,886	1.9
35	Oak Brook/Hinsdale	61,933	1.8

SOURCE: Employment data provided by NIPC (at zip code levels) aggregated to level of 87 zones used in this analysis.

MAJOR SUBURBAN CORRIDORS

Based on inter-zonal trip analysis, two suburban corridors emerge. The most significant, in terms of volume, is that corridor defined by the northern tier of Cook County; this corridor has a trip demand approaching 35,000. The other moderately significant corridor is a north-south corridor paralleling the Tri-State Tollway between Hinsdale and O'Hare Airport. Other inter-zonal suburban trip making is simply not high enough in volume or in concentrated alignment to constitute corridors of equal significance.

North Cook County East/West Corridor

Preliminary analysis of the north Cook County area indicates a heavy east/west travel pattern. Exhibit 8 shows demand among the four zones comprising this corridor. Total trips within the corridor are 34,800. The areas included are the four townships: New Trier, Northfield, Wheeling and a portion of Palatine.

The corridor is large, covering 7 miles north to south and approximately 15 miles east to west. The demand is substantial between Zones 36, 38 and 41. Zone 42, the Lakefront area of New Trier Township, does not have a particularily heavy interchange with those zones to the west.

Tri-State Tollway

The Tri-State Tollway handles a large volume of traffic, and is the principal circumferential auto route around the region. It has often been thought of as a possible right-of-way for express bus or new rail service. Exhibit 9 illustrates cumulative demand for each zone along the Tollway originating from all other zones along it.

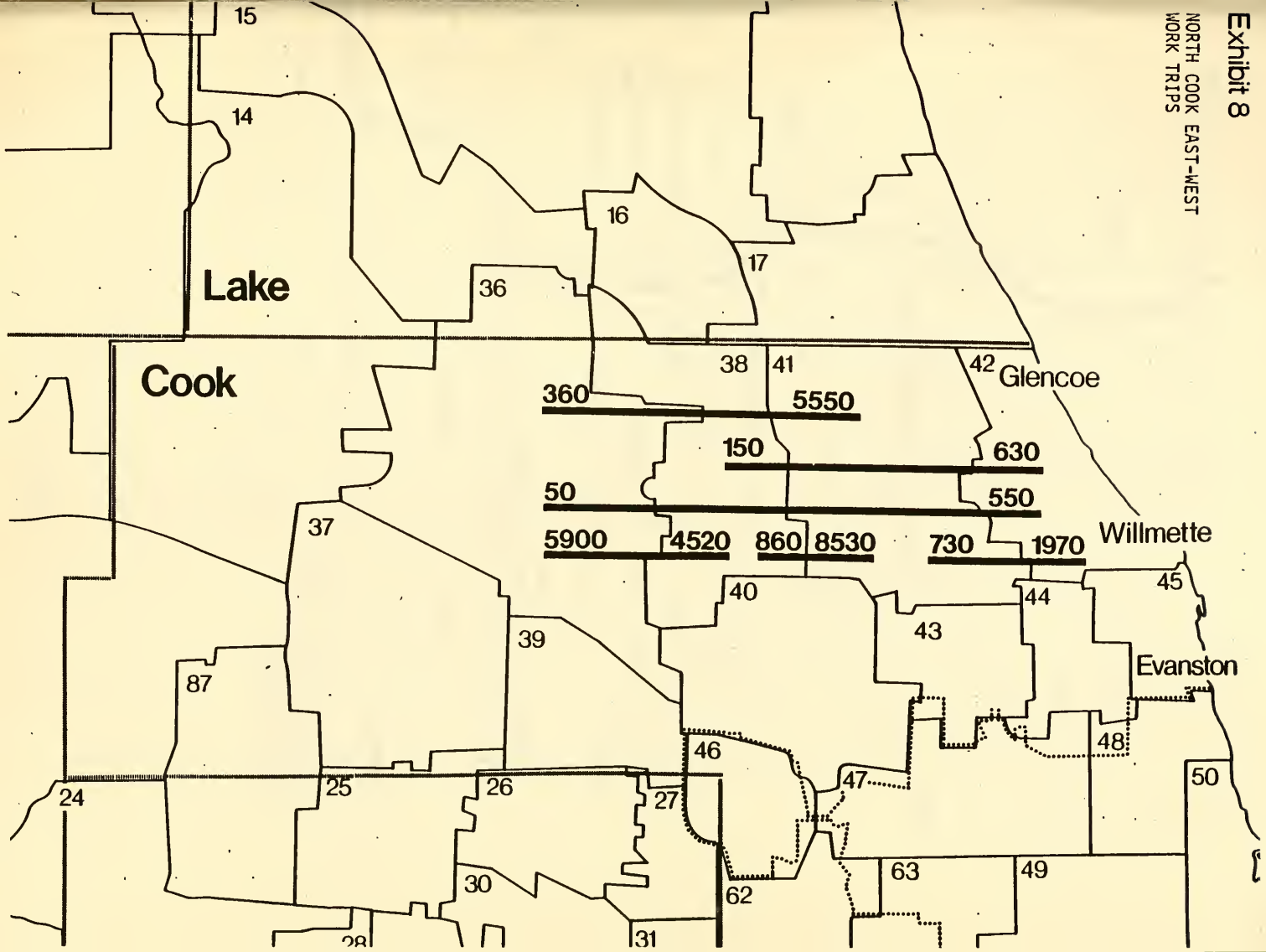
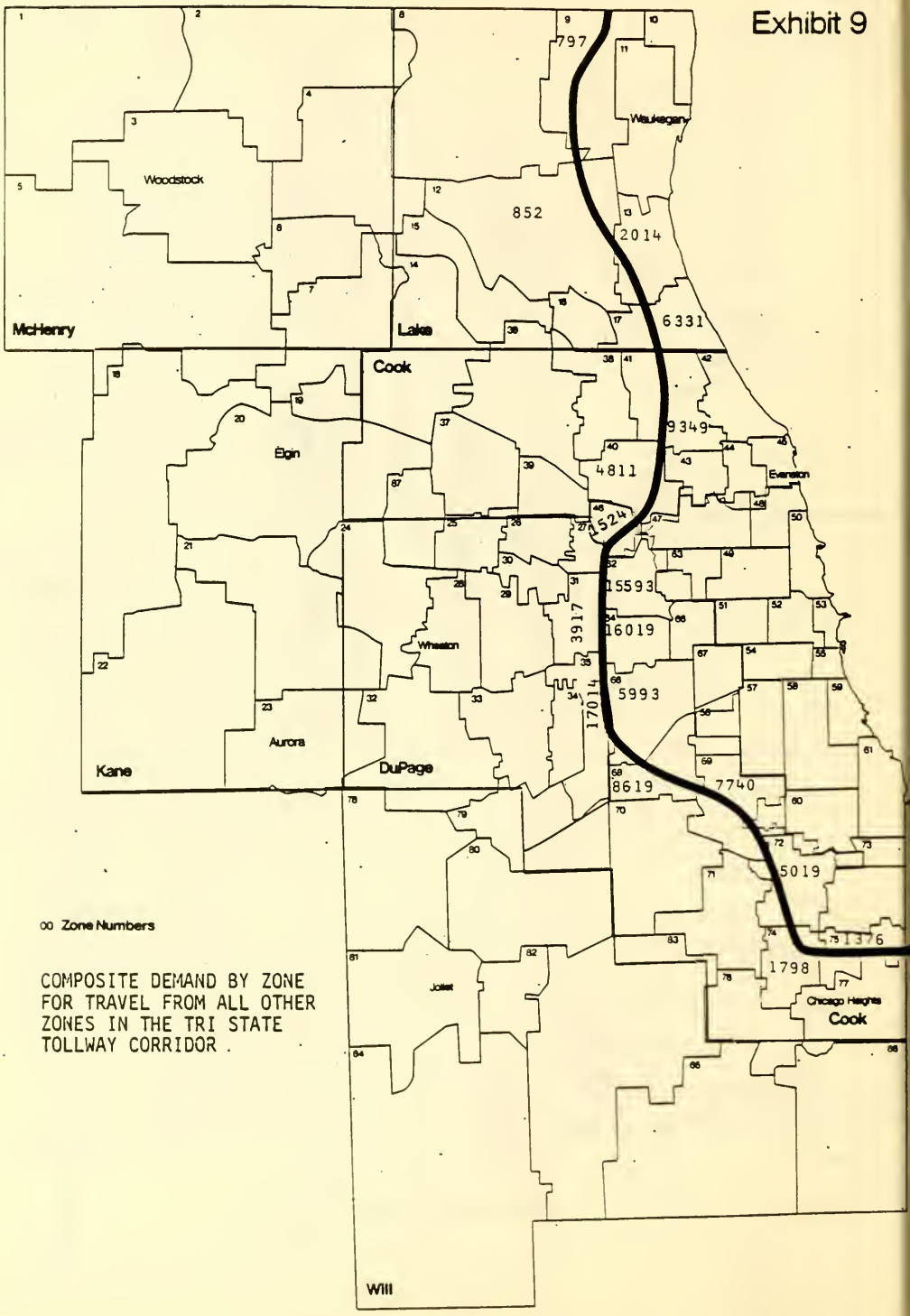


Exhibit 8
NORTH COOK EAST-WEST
WORK TRIPS
Lake
Cook
Glencoe
Willmette
Evanston
360
5550
150
630
50
550
5900
4520
860
8530
730
1970
15
14
16
17
36
38
41
42
37
39
40
43
44
45
87
46
47
48
50
24
25
26
27
30
62
63
49
31

Exhibit 9



00 Zone Numbers

COMPOSITE DEMAND BY ZONE FOR TRAVEL FROM ALL OTHER ZONES IN THE TRI STATE TOLLWAY CORRIDOR .

The zone containing Oak Brook (35) has the highest cumulative demand (17,014) for trips originating in the corridor followed by Zones 62 and 64 (west suburban Cook County). This pattern would suggest the highest volume of corridor trips occurs between Hinsdale on the south and Northlake on the north. Zones located between Hinsdale on the north and Alsip on the south also show moderate cumulative demand. The zone encompassing Northbrook (Zone 41) also has a moderate cumulative demand of 9,349.

SUBREGIONAL TRIP INTERCHANGE

Exhibit 10 illustrates intra and inter subregional trips for the subregional areas: Chicago, Suburban Cook, DuPage, Lake, McHenry, Will, Kane, other Illinois Counties, and Northwest Indiana.

Internal subregional trips are the largest category, with every subregion having more total internal trips than the summation of all trips outside the subregion, except DuPage which has a near equal split. An interesting finding is that suburban Cook County imports more employees from the Northeastern Illinois collar counties, except Will, than does the City of Chicago.

The following table compares internal subregion trips with all trips originating in the subregion. Northwest Indiana and the City of Chicago are the most self-contained in terms of residents living and working within the respective subregions, while DuPage has the highest proportion of residents working outside that subregion.

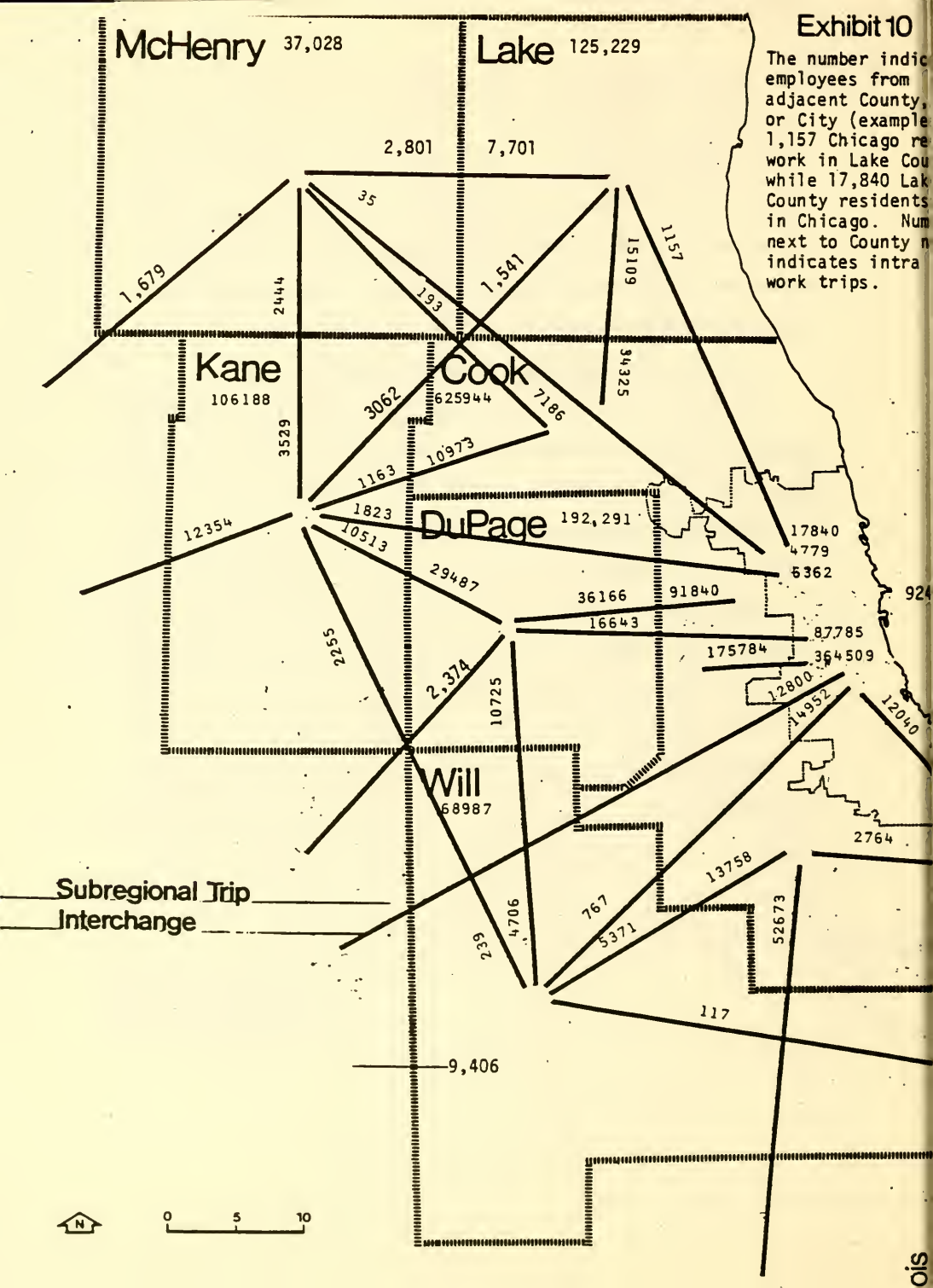


Exhibit 10

The number indic employees from adjacent County, or City (example 1,157 Chicago re work in Lake Cou while 17,840 Lak County residents in Chicago. Num next to County n indicates intra work trips.

COMPARISON OF INTRA SUBREGION TRIPS
TO TOTAL SUBREGION TRIPS

Subregion	Internal Subregion Trips	Total All Trips Originating in Subregion	Percentage of Internal Subregional Trips To All Originating Trips
McHenry	37,028	60,901	61
Lake	125,229	184,208	68
Kane	106,188	157,234	67
DuPage	192,291	388,064	49
Suburban Cook	625,944	1,059,027	59
City of Chicago	924,315	1,122,611	82
Will	68,987	110,797	62
Northwest Indiana	191,729	206,657	93
TOTALS/AVERAGE	2,271,711	3,289,499	69

SATELLITE CITY TRIPS

The five satellite cities - Waukegan, Elgin, Aurora, Joliet and Chicago Heights (included because of its high concentration of manufacturing) collectively employ 229,345 individuals or 6.8% of the regional total. The cities are relatively self-contained, with a majority of workers living in the satellite city area as shown in the following table.

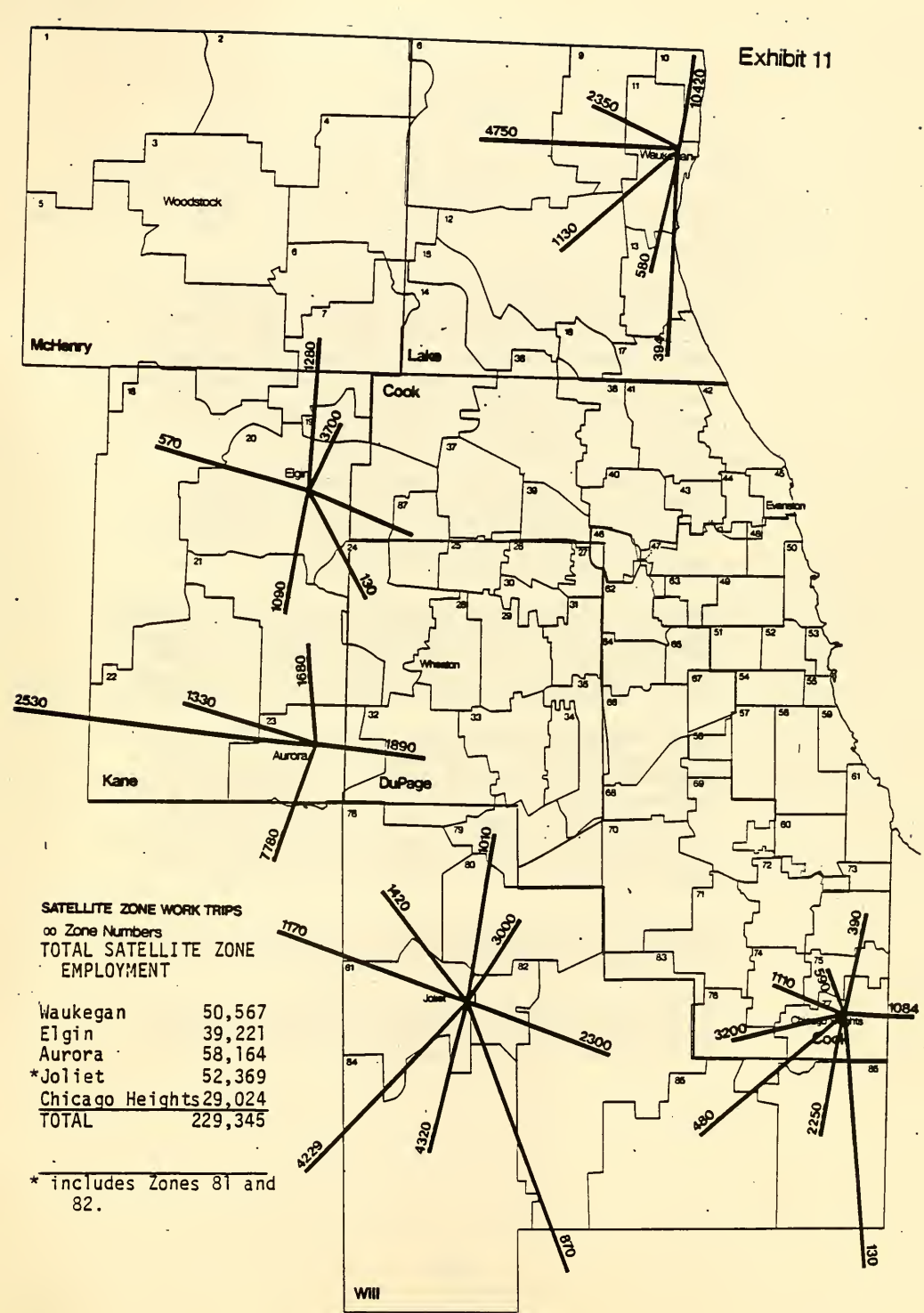
Satellite City Zone	Total Zone Employment	Employees Originating in Zone	% Originating in Zone of Total Zone Employment
Waukegan	50,567	29,276	58
Elgin	39,221	25,344	65
Aurora	58,164	38,889	58
Joliet*	52,369	30,175	58
Chicago Heights	29,024	15,918	55
TOTAL/AVERAGE	229,345	139,602	61

* For this analysis, Joliet is comprised of Zones 81 and 82.

Exhibit 11 portrays work trips from external zones to these satellite city zones.

Aurora is a major employer for residents of DeKalb and Kendall Counties. Joliet employs 4,229 residents of Grundy County. Chicago Heights imports 1,064 workers from Indiana.

Exhibit 11



SATELLITE ZONE WORK TRIPS

∞ Zone Numbers

TOTAL SATELLITE ZONE EMPLOYMENT

Waukegan	50,567
Elgin	39,221
Aurora	58,164
*Joliet	52,369
Chicago Heights	29,024
TOTAL	229,345

* includes Zones 81 and 82.

CHAPTER FOUR

CONCLUSION

Based on the macro-scale analyses discussed in this report, the following conclusions are drawn in regard to work trip patterns within the six county area:

1. A large number (about 25%) of work trips are local (i.e., intra-zonal). While the zonal configuration on which this is based is somewhat arbitrary (in that it is not strictly geographic, but rather is based on zip codes), a reaggregation to any other configuration encompassing the same number and size of zones would yield similar results. Simply stated, a significant 25% of the region's labor force resides near the job.

2. High volume trips between zones outside the City of Chicago occur only in a few areas, predominantly in northwest and west suburban Cook County. In large part this corresponds to the largest concentrations of employment opportunities within suburbia.

3. Satellite cities (e.g., Waukegan, Aurora, Elgin, Joliet) exhibit the highest concentrations of trips within zones and additionally have a moderate employment draw from surrounding areas. This would suggest that in the home to work trip context, they are fairly self sufficient.

4. While suburban to Chicago CBD work trips follow fairly predictable and well documented patterns, the reverse commute work trip from the City to the suburbs does not. The reverse trip, in terms of volume, is directed to a limited number of suburban areas, notably northwest and west suburban Cook County. Again, these are the suburban areas having the largest concentrations of employment opportunities.

5. Chicago CBD oriented trips draw the highest volumes from suburban Cook and DuPage Counties. From other collar counties this volume decreases rapidly.

6. Reverse commute work trips draw significantly from all parts of Chicago with the longest trips being from the South Side to northwest Cook County.

7. Only two high volume suburban corridors are evident from the survey results. They are: (1) a corridor spanning the northern portion of Cook County from Northbrook to approximately Palatine; and (2) a portion of the Tri-State Tollway corridor spanning the area from Hinsdale to Northlake. The often held belief that a larger number of suburban corridors exist is not substantiated by the survey results. Since this survey addresses home to work trips only, it may very well be that other apparent corridors are the result of traffic volumes generated by goods movement, non-work trips, or from dispersed trip patterns in which, for segments of varying lengths, the traffic is funneled onto expressways or major arterials.

8. Significantly, suburban Cook County imports more employees from the collar counties, with the exception of Will, than does the City of Chicago. This reflects the shift in employment opportunities from City to suburbs which has taken place over the last several decades.

These conclusions must be considered as general observations of a complex work trip pattern of over 3.3 million employees occurring in the six county metropolitan area. In Phase II of the Regional Transit Needs Assessment, detailed analyses of smaller areas will be made as necessary to determine market potential, estimate transit demand, develop service levels, and perform financial analyses for appropriate service proposals.

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DEMCO

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